What is claimed is:

1. A brake system for a heavy vehicle, comprising:

a plurality of brake components;

at least one vehicle performance sensor;

a central control unit receiving sensor signals from said at least one vehicle performance sensor and generating central control signals for controlling said plurality of brake components based on the received sensor signals; and

a distributed electronic control unit receiving sensor signals from said at least one vehicle performance sensor and generating local control signals for controlling less than all of said plurality of brake components based on the received sensor signals.

2. The brake system of Claim 1 wherein said distributed electronic control unit generates local control signals for controlling only one of said plurality of brake components.

3. The brake system of Claim 1 wherein said distributed electronic control unit generates local control signals for controlling at least two of said plurality of brake components located on a common axle of the vehicle.

4. The brake system of Claim 1 wherein said at least one vehicle performance sensor comprises a plurality of vehicle performance sensors, at least one of which

provides sensor signals to both said central control unit and said distributed electronic control unit.

5. The brake system of Claim 1 wherein said at least one vehicle performance sensor comprises a plurality of vehicle performance sensors, at least one of which provides sensor signals only to said central control unit.

6. The brake system of Claim 1 wherein said at least one vehicle performance sensor comprises a plurality of vehicle performance sensors, at least one of which provides sensor signals only to said distributed electronic control unit.

7. The brake system of Claim 1 further comprising a second distributed electronic control unit and wherein said at least one vehicle performance sensor comprises a plurality of vehicle performance sensors, at least one of which provides sensor signals to said central control unit, said distributed electronic control unit and said second distributed electronic control unit.

8. The brake system of Claim 1 further comprising a second distributed electronic control unit and wherein said at least one vehicle performance sensor comprises a plurality of vehicle performance sensors, at least one of which provides sensor signals to said distributed electronic control unit and said second distributed electronic control unit.

9. The system of Claim 1 wherein at least one of said vehicle performance sensors comprises part of one of said plurality of brake components.

10. The system of Claim 1 wherein at least one of said vehicle performance sensors is separate from said plurality of brake components.

11. The brake system of claim 1 further comprising a manual input for overriding the central control signals and the local control signals

12. A brake system for a heavy vehicle, comprising:

a plurality of brake components;

at least one vehicle performance sensor; and

a plurality of distributed electronic control units, each of said plurality of distributed electronic control units being associated with a single one of said plurality of brake components, each of said plurality of distributed electronic control units receiving sensor signals from said at least one vehicle performance sensor and generating local control signals for controlling the one of said plurality of brake components with which that particular distributed electronic control unit is associated based on the received sensor signals.

13. The system of Claim 12 further comprising a central control unit receiving sensor signals from said at least one vehicle performance sensor and generating

central control signals for controlling said plurality of brake components based on the received sensor signals.

14. A brake system for a heavy vehicle, comprising:

a plurality of brake components, said plurality of brake components comprising a first subset of brake components and a second subset of brake components;

at least one vehicle performance sensor;

a central control unit receiving sensor signals from said at least one vehicle performance sensor and generating central control signals for controlling the first subset of brake components and the second subset of brake components based on the received sensor signals; and

a distributed electronic control unit receiving sensor signals from said at least one vehicle performance sensor and generating local control signals for controlling the first subset of brake components based on the received sensor signals.

15. The system of Claim 14 wherein the first subset of brake components comprises a single brake component.

16. The system of Claim 14 wherein the first subset of brake components comprises a plurality of brake components.

17. The system of Claim 16 wherein the plurality of brake components comprising the first subset of brake components are disposed on a common axle of the vehicle.

18. The system of Claim 14 further comprising a second distributed electronic control unit receiving sensor signals from said at least one vehicle performance sensor and generating local control signals for controlling the second subset of brake components based on the received sensor signals.

19. The system of Claim 17 wherein the second subset of brake components comprises a single brake component.

20. The system of Claim 17 wherein the second subset of brake components comprises a plurality of brake components.

21. The system of Claim 20 wherein the plurality of brake components comprising the second subset of brake components are disposed on a common axle of the vehicle.